

**APPLICATION**  
**FOR**  
**UNITED STATES LETTERS PATENT**

APPLICANT NAME     C. S. Baumann, et al

TITLE                SYSTEM AND METHOD FOR  
AUTOMATING INVOICE  
PROCESSING WITH POSITIVE  
CONFIRMATION

DOCKET NO.            END9 2000 0165 US1

**INTERNATIONAL BUSINESS MACHINES CORPORATION**

**CERTIFICATE OF MAILING UNDER 37 CFR 1.10**

I hereby certify that, on the date shown below, this correspondence is being deposited with the United States Postal Service in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C., 20231 as

"Express Mail Post Office to Addressee" on 3/28/01

Mailing Label No. EL598672934US

Name of person mailing paper: June M. Mitchell

June M. Mitchell  
Signature

3/28/01  
Date

**SYSTEM AND METHOD FOR AUTOMATING INVOICE PROCESSING WITH  
POSITIVE CONFIRMATION**

**Background of the Invention**

Cross References to Related Applications

5

The following U.S. patent applications, filed concurrently or otherwise copending, are assigned to the assignee hereof and contain subject matter related, in certain respect, to the subject matter of the present application.

10

Serial No. 09/657,215, filed 7 Sep 2000, entitled "System and Method for Clustering Servers for Performance and Load Balancing", assignee docket END9-2000-0104-US1;

15

Serial No. 09/657,216, filed 7 Sep 2000, entitled "System and Method for Front End Business Logic and Validation", assignee docket END9-2000-0105-US1;

Serial No. 09/657,217, filed 7 Sep 2000, entitled "System and Method for Data Transfer With Respect to External Applications", assignee docket END9-2000-0106-US1;

5      Serial No. 09/656,037, filed 7 Sep 2000, entitled "System and Method for Providing a Relational Database Backend", assignee docket END9-2000-0107-US1;

Serial No. 09/656,803, filed 7 Sep 2000, entitled "System and Method for Providing a Role Table GUI via Company Group", assignee docket END9-2000-0108-US1;

10     Serial No. 09/656,967, filed 7 Sep 2000, entitled "System and Method for Populating HTML Forms Using Relational Database Agents", assignee docket END9-2000-0109-US1;

15     Serial No. 09/657,196, filed 7 Sep 2000, entitled "System and Method for Catalog Administration Using Supplier Provided Flat Files", assignee docket END9-2000-0110-US1; and

Serial No. 09/657,195, filed 7 Sep 2000, entitled "System and Method for Providing an Application Navigator Client Menu Side Bar", assignee docket END9-2000-0111-US1.

Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
GENERATING A COMPANY GROUP USER PROFILE", assignee docket  
number END9 2000 0166 US1.

5 Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
SHARING DATA ACROSS FRAMES USING ENVIRONMENT VARIABLES ",  
assignee docket number END9 2000 0167 US1.

Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
SYNCHRONIZING LEDGER ACCOUNTS BY COMPANY GROUP", assignee  
docket number END9 2000 0168 US1.

10 Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
GROUPING COMPANIES ACCORDING TO ACCOUNTING SYSTEM OR RULES",  
assignee docket number END9 2000 0169 US1.

15 Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR FRAME  
STORAGE OF EXECUTABLE CODE", assignee docket number END9  
2000 0174 US1.

Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
INVOICE IMAGING THROUGH NEGATIVE CONFIRMATION PROCESS",  
assignee docket number END9 2000 0175 US1.

Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
LEVERAGING PROCUREMENT ACROSS COMPANIES AND COMPANY GROUPS",  
assignee docket number END9 2000 0176 US1.

Serial No. 09/\_\_\_\_\_, entitled "SYSTEM AND METHOD FOR  
5 PROCESSING TAX CODES BY COMPANY GROUP", assignee docket  
number END9 2000 0177 US1.

Serial No. 09/\_\_\_\_\_, filed 2 March 2001, entitled "SYSTEM  
AND METHOD FOR MANAGING INTERNET TRADING NETWORKS", assignee  
docket number END9 2000 0178 US1.

10 The above-identified patent applications are incorporated  
herein by reference.

Technical Field of the Invention

This invention pertains to procurement systems. More  
particularly, it relates to a method and system for  
15 automating the payment of invoices, particularly useful for  
goods and services not coming through a receiving dock,  
including automating preparation of a move ticket responsive  
to requestor entered positive confirmation.

## Background Art

Historically, payments of invoices are triggered by a three way match: the invoice must match the purchase order (PO) terms and conditions, and the goods received must match those stated in quality and quantity against that PO. A problem occurs, particularly with respect to general procurement items, when such items are not tangible things which come through a receiving dock. In this case, it is difficult to do the three way match. For example, services may not flow through dock. As a result, procurement systems have defined an "invoice not received" situation, which results in payment not being made until someone does something -- and that initiates what is referred to as a paper chase. There is a need in the art to improve upon the paper chase situation by eliminating the receipt process.

Some procurement systems implement a "negative confirmation" process which results in payment of an invoice unless a requester submits a rejection. In this process, when an invoice is received, a notification is given to the requester alerting him to fact that the invoice will be paid unless requester sends back a notification that it should not be paid.

The problem with negative authorization is that, while it may work fine for low cost things, for larger (more expensive) things, the risk that payment will be made before negative confirmation could be received may be too great.

5           It is an object of the invention to provide an improved business process for general procurement and accounts payable activities.

10           It is a further object of the invention to provide a system and method for automating the preparation of move tickets based on requestor entered positive confirmation.

15           It is a further object of the invention to provide a system and method for automatically providing invoice information to a front end requisition and catalog system keyed off of receipt of an invoice by a back end procurement services system.

### **Summary of the Invention**

A system and method for approving and paying an invoice for commodities, the method including the steps of receiving

an invoice for commodities from a vendor; generating from the invoice a notification to an authorizer that includes information needed to pay the invoice and a selectable button for authorizing or rejecting payment; and responsive to authorization creating an automated receipt transaction file and entering the transaction file into a system for payment.

In accordance with an aspect of the invention, there is provided a computer program product configured for approving and paying an invoice.

Other features and advantages of this invention will become apparent from the following detailed description of the presently preferred embodiment of the invention, taken in conjunction with the accompanying drawings.

### **Brief Description of the Drawings**

Figure 1 is a system and flow diagram illustrating the preferred embodiment of the invention for processing invoices.



Figure 2 is a system and flow diagram further illustrating the preferred embodiment of the invention.

### **Best Mode for Carrying Out the Invention**

5 In accordance with the preferred embodiment of the invention, a system and method is provided for processing invoices. Further, a negative confirmation process is modified so that a positive confirmation may be required for selected commodity code and company code.

10 Referring to Figure 1, an invoice processing system includes a requisition and catalog server (referred to as a Req/Cat Web, or RCW, server) 40, a procurement services system (SAP) 42, and a requester terminal (browser) 46. ReqCat Web 40 allows requesters to input requirements (requisitions) 51 which ReqCat then passes to SAP 42, which  
15 creates purchase orders 87, sends them to vendors 48 for fulfillment, receives the vendors invoices 89, and prepares the payments. Companies have the option of designating various commodities as either receivable or non-receivable, and this designation is stored in ReqCat web 40 and passed  
20 to SAP 42 on inbound requisitions 51.

In operation, responsive to a purchase request entered by a requestor at browser 46, front end RCW server 40 generates and sends to back end SAP server a requisition 51. SAP 42 generates therefrom a purchase order 87 for  
5 transmission (if electronic) or delivery (if paper or fax) to vendor 48. The requisition and resulting purchase order may be materials or services selected from a catalog maintained at RCW 40 and accessed by requestor 46.

In accordance with the terms and conditions of the  
10 purchase order 87, vendor 48 returns an invoice 89 to SAP server 42 requesting payment for the goods or services. Responsive to receipt of invoice 89, SAP 42 prepares and communicates transaction information 404 to RCW 40, and RCW  
40 provides that information in transaction notification 65  
15 to requestor 46 in a format, such as a window or frame, including the transaction information 404 and a selection device, such as buttons 406 and 408, or the like, for accepting or rejecting the invoice.

In the event that requestor 46 accepts the invoice, or  
20 authorizes payment, an automated goods received (move ticket) is generated back to SAP system 42 and payment made without further human intervention. In the event that

requestor 46 rejects the invoice, an accounts payable rejection process 412 is initiated which, in an exemplary embodiment, may involve buyer 414 in advising vendor 48 of the rejection.

5 Referring to Figure 2, the invoice processing system of the preferred embodiment of the invention includes a requester terminal 46, a Req/Cat Web web server 422, a Req/Cat web application server 423 and a procurement services system (SAP) 42. Web server 422 includes a  
10 positive confirmation application 424 and a database 425, and application server includes an execution engine, a requisition bridge 427 and confirmations interface 428 to SAP system 42.

15 A positive confirmation process implemented by the system of Figure 2 provides the following functions:

- (1) Providing notification 420 to requester 46 that an invoice 89 requiring positive confirmation has been received.

(2) Recording the acceptance or rejection 421 of payment of the invoice to database 425, herein an IBM DB2 database.

5 (3) Notifying SAP 42 using an automated bridge 427 when payment of an invoice is accepted.

(4) Notifying Accounts Payable when payment is rejected.

An inbound bridge executed in positive confirmation bridge 426 provides for marking inbound invoice 89 line items as requiring positive confirmation.

10 Requesters 46 are provided notice 420 of invoices which require positive confirmation. This notice directs the user (aka requester or authorizer) to a location where the positive confirmation can be performed. The terms user, requester, authorizer are used to refer to persons  
15 requesting commodities, which may be tangible goods or intangible goods, such as services, and to persons acting on behalf of or in lieu of such persons. A user interface represented by line 428 and executed by application 424 is provided to database 425 for requester 46 to enter an  
20 invoice ID and obtain access to the invoice data. This

interface also provides a method for accepting or rejecting the invoice, that is, for providing positive confirmation response 421. By using log information, users are prevented from accessing an invoice that is not their own. The  
5 interface 424 records acceptance or rejection of payment in database 425.

Positive confirmation notices 420, sent by e-mail to requester 46, direct the requester to review a positive confirmation notice within Req/Cat 422.

10 On a scheduled basis mail is generated to notify accounts payable (AP) of any new invoice items for which payment has been rejected. On a scheduled basis a bridge, possibly implemented within positive confirmation bridge 426, sends data from database 425 to SAP 42 for any new  
15 invoice items for which payment has been accepted.

This bridge executed within positive confirmation bridge 426 may be written to extract positive confirmation responses received by RCW 422 from requesters 46, and pass the extracted file of responses to SAP 42 for posting as  
20 goods receipts.

Companies for which the procurement services system (SAP) are provided have the option of designating commodities as either receivable or non-receivable. Commodities designated as non-receivable follow a traditional negative confirmation process for payment authorization. Commodities designated as receivable and that were sourced from ReqCat Web 423 require a positive confirmation 421 from the requester 46 to authorize payment to proceed.

10           SAP 42 passes a confirmations interface 428 to RCW server 423 containing invoices 89 posted against both receivable and non-receivable purchase order (PO) items. 1 Those invoices posted against non-receivable PO items are considered negative confirmation records, and those invoices posted against receivable PO items are considered positive confirmation records. ReqCat Web 422 notifies requester 46 of positive confirmation conditions which require his/her action. The requester logs on to ReqCat Web 422 and responds to the positive confirmation notice 420 by indicating that all goods invoiced have been received. ReqCat Web updates the appropriate positive confirmation record in database 425 with the positive confirmation response 421.

On a daily basis, positive confirmation bridge 426 invokes a map to identify all positive confirmation responses 421 recorded in database 425 since last execution. This map within bridge 426 creates an output file of all positive confirmation responses recorded since the map was last executed. A delivery component in server 423 is then invoked to initiate transfer of the output file to SAP 42. Upon successful transfer of the positive confirmation file to SAP 42, a SAP goods receipt map formats the incoming data as required by SAP and invokes a SAP material movement IDOC function to post the goods receipt against the corresponding purchase order item.

All transmissions for positive confirmation records to SAP 42 are initiated by the sending system 423. A script on the ReqCat Web application sever 423 is scheduled to run on a periodic, say daily, basis to invoke a map which identifies all positive confirmation responses recorded since the map was last executed and create an output file of those responses and invoke a delivery component in SAP 42. On the SAP 42 side of the transfer, a bridge receives the output file as a goods movement IDOC file, and a script executes within SAP 42 to receive the file, do trailer processing, copy the input file to a history file, raise an

SAP user event to start a job to create SAP goods movement documents and post the goods receipt documents in support of eventual payments against the approved invoices to the vendor.

5

### **Advantages over the Prior Art**

It is an advantage of the invention that there is provided an improved business process for general procurement and accounts payable activities.

10

It is a further advantage of the invention that there is provided a system and method for automating the preparation of move tickets based on requestor entered positive confirmation.

15

It is a further advantage of the invention that there is provided a system and method for automatically providing invoice information to a front end requisition and catalog system keyed off of receipt of an invoice by a back end procurement services system.



## Alternative Embodiments

It will be appreciated that, although specific  
embodiments of the invention have been described herein for  
purposes of illustration, various modifications may be made  
5 without departing from the spirit and scope of the  
invention. In particular, it is within the scope of the  
invention to provide a computer program product or program  
element, or a program storage or memory device such as a  
solid or fluid transmission medium, magnetic or optical  
10 wire, tape or disc, or the like, for storing signals  
readable by a machine, for controlling the operation of a  
computer according to the method of the invention and/or to  
structure its components in accordance with the system of  
the invention.

15

Further, each step of the method may be executed on any  
general computer, such as an IBM System 390, AS/400, PC or  
the like and pursuant to one or more, or a part of one or  
more, program elements, modules or objects generated from  
20 any programming language, such as C++, Java, Pl/1, Fortran  
or the like. And still further, each said step, or a file  
or object or the like implementing each said step, may be

executed by special purpose hardware or a circuit module designed for that purpose.

Accordingly, the scope of protection of this invention  
5 is limited only by the following claims and their  
equivalents.